

THE
ENTOMOLOGY OF AUSTRALIA,
IN A SERIES OF
MONOGRAPHS.

BY
GEORGE ROBERT GRAY,
SEC. ENT. SOC. LOND. & MEM. SOC. D'ENT. FR.



PART I.
CONTAINING
THE MONOGRAPH OF THE GENUS PHASMA.

LONDON:
PUBLISHED BY THE AUTHOR, No. 22, EAST STREET, QUEEN SQUARE:
SOLD ALSO BY MESSRS. LONGMAN AND CO., PATERNOSTER ROW.

1833.

PRINTED BY RICHARD TAYLOR,
RED LION COURT, FLEET STREET.

TO
HIS ROYAL HIGHNESS
THE DUKE OF SUSSEX, K.G.

Sc. Sc. Sc. Sc.

PRESIDENT OF THE ROYAL SOCIETY,

WHOSE PATRONAGE, EVER LIBERALLY BESTOWED
ON THE CULTIVATION OF SCIENCE IN ALL ITS BRANCHES,
HAS BEEN ESPECIALLY EXTENDED
TO THE PRESENT WORK,

THE FOLLOWING PAGES
ARE GRATEFULLY AND RESPECTFULLY DEDICATED

BY

HIS ROYAL HIGHNESS'S

OBLIGED AND HUMBLE SERVANT,

THE AUTHOR.

INTRODUCTION.

THE Author, impelled by a strong desire of adding to the knowledge of the Natural History of so remote and highly interesting a continent as that of Australia, and in the hope of bringing its Entomological treasures before the scientific public, has been induced to undertake the present Work. Although so long a British possession, scarcely one tenth part of its natural objects (so peculiarly its own, and therefore so well worthy of attention,) have hitherto been made known; and amateurs and men of science are equally destitute of the means of naming the numerous collections of Insects which are now so frequently brought from that country. To obviate this difficulty, by affording facilities for the naming of such collections, is evidently a desirable object.

Much of this difficulty originates in the circumstance that the descriptions and figures of such insects as have been made known, are scattered through various works, only to be acquired at great expense. A list of these may not be unacceptable here, as showing what has been previously published upon the subject.

1792. It appears that Fabricius was the first author who noticed the insects of New Holland. In his "*Entomologia Systematica*" he

described the specimens collected by the late Sir Joseph Banks, Bart., while circumnavigating the globe with Captain Cook, which insects form a portion of the collection presented by that great patron of science during his lifetime to the Linnean Society, and now denominated the Banksian Cabinet. It is to be regretted that some of these insects have become decayed.

Olivier published, about the same time, his "*Entomologie, ou Histoire Naturelle des Insectes*," which contains a few figures of the Banksian insects described by the former author.

1802. "Descriptions of some singular Insects [from New Holland], by Charles Schreiber," were published in the Transactions of the Linnean Society.

1805. Mr. Donovan published his Work entitled "An Epitome of the Natural History of the Insects of New Holland," certainly one of the most elegant works on Entomology which had then appeared in this country; and the only one, up to the present period, which treats solely on the insects generally of that part of the world. In this he engraved one hundred and fifty-three species, some of which had been previously described by Fabricius, although others were then for the first time noticed.

Mr. Lewin also published his "Prodromus Entomology. [*sic!*] Natural History of Lepidopterous Insects of New South Wales;" all of which, except one, are nocturnal insects. This work is of great utility and interest, on account of the figure of each species being accompanied with those of its larva and chrysalis,—an example which it is to be hoped other residents will follow for the benefit of science.

1808. "Description of Notoclea, a new Genus of Coleopterous Insects from New Holland, by Thomas Marsham, Esq., Tr. L.S." was

published in the Transactions of the Linnean Society ; the first, and I may add, the only monograph that has appeared. It is accompanied with a figure of each species, but is defective, when compared with the present more extended state of information upon the subject.

1814. Dr. Leach, in the first two volumes of his "Zoological Miscellany," gives descriptions and figures of various species of the insects of Australia.

1817. Descriptions and engravings of several Australian insects were inserted by the late profound entomologist Latreille, in Cuvier's "*Règne Animal*." In the same year also appeared Schonherr's "*Appendix ad Synonymiam Insectorum, sistens Descriptiones novarum Specierum*;" which, in addition, contains descriptions of some new species of Australian Coleopterous insects.

1818. The learned entomologist of this country, the Rev. William Kirby, M.A. published two papers in the Transactions of the Linnean Society. The first of these he termed "A Century of Insects." In the course of this he described several Australian Coleoptera. The other is styled "A Description of several new species of Insects collected in New Holland by Robert Brown, Esq. F.R.S." Both these papers are accompanied by figures of the most remarkable species.

1825. Many years afterwards M. le Comte Dejean commenced publishing his "*Species général des Coleoptères*," which contains descriptions of various new species of Australian *Carabidæ*.

The Zoological Atlas of the "*Voyage de la Coquille autour du Monde, par le Chev. J. Duperrey*," was also commenced during the same year, and some Australian insects are figured in it by M. Guérin; but of these, the descriptions have not yet made their appearance.

1826. The "Appendix of Natural History annexed to Captain P. P.

King's Narrative of a Survey of the Intertropical and Western Coasts of Australia," contains a paper by W. S. MacLeay, Esq., illustrative of the insects collected during that survey, forming a list of one hundred and eighty-eight species, of which eighty-one are new. Three of the most singular insects in the collection are there engraved.

Various species will be found scattered through the following works: "*Encyclopédie Méthodique*," "*Dictionnaire des Sciences Naturelles*," "*Zoological Journal*," "*Magasin d'Entomologie*;" and the author of the present publication, whilst engaged in illustrating Griffith's Translation of Cuvier's "*Règne Animal*," has there introduced several species of Australian insects.

I have thus presented to my readers a list of all the Works which have treated more or less upon the Insects of Australia. If all these volumes were in their possession, they would still find that their library was very incomplete, when consulted for the purpose of assisting them in naming their collections. It therefore occurred to me, that were I to commence a Work that should not only embrace all the species hitherto described, but in the course of which I should introduce those which are new, and form one general collection, I might hope for that patronage from the public without which it certainly could not proceed.

I propose to publish one Part in about every six months, to contain eight Plates, constituting the figures to one or more monographs, but not to refigure such as have been previously engraved by Mr. Donovan; and that *each Part* shall be complete in *itself*.

It is my intention to subjoin English descriptions and Latin specific characters, and to avoid making the Work too technical for the general observer; but to form it upon such a principle, that it may be understood by the amateur as well as the scientific student of Entomology.

I beg further to state, that I should not have undertaken this Work had it not been for the kindness of several individuals, well known as possessing the finest collections in this country; to whom I now return my grateful thanks for the assistance they have rendered me, and for the liberal manner in which they have thrown open their cabinets to my use.

In an especial manner I am proud of naming,—

JOHN GEORGE CHILDREN, Esq., of the British Museum, to whom I am also indebted for the use of the richest Entomological library in England;

Mrs. CHILDREN, who has with the greatest kindness allowed me the use of the splendid collection of Lepidopterous insects in her possession;

And the Rev. FREDERICK THOMAS HOPE, whom I beg leave to thank for his valuable assistance, and the loan of many unique insects in his fine collection.

I have also to offer my thanks to various gentlemen whose names will be noticed in the course of publication.

Perhaps it may not be amiss to state that of the species described in the First Part of this “Entomology of Australia,” three only have been previously noticed, and these are inserted in two distinct Works. Of these, two only have been before figured. Hence it appears how limited is our present knowledge, and it is obvious that the Work now brought before the public is not an unnecessary and uncalled for labour; as supplying a great and acknowledged deficiency, it is hoped that it will deserve the attention and support of all lovers of Entomological Science.

Before closing this Introduction, the Author thinks it a duty to state

to whom he is indebted for the assistance afforded him in the several departments ;—namely, to Mr. CHARLES M. CURTIS, to whom much credit is due for the accuracy of the drawings ; to Mr. B. WATERHOUSE HAWKINS, for that of the etchings ; and to Mr. GEORGE BAYFIELD, for the great attention he has paid to the colouring of the Plates.

THE
ENTOMOLOGY OF AUSTRALIA.

THE insects now brought before the public, form one of the most curious and singular families of the Orthopterous order, and are termed Phasmidæ, or Spectres. They belong to the first section, *Cursoria*, or Walkers, and differ very much from the other family of the same section, termed Mantidæ, or Mantes, in having their fore legs similar in form to the four hind ones; whilst those of the latter are raptorious; that is to say, having the fore femora or thighs very strong, projecting straight forwards, with a channel for the reception of the tibiæ or shanks, which are inflexed, and both armed with a double series of spurs. They differ from the second section, *Saltatoria*, or Leapers, in having their hind legs of moderate length, and not formed for leaping; and also in the tegmina or fore wings being much shorter than the wings. The mouth of the insects of this order is provided with four unequal palpi or feelers; the two fore or maxillary feelers are longest, and five-jointed; the two hind or labial feelers are shorter than the others, and three-jointed; they are generally compressed, with the last joints of all truncated at their ends.

Like all the Orthopterous insects, they undergo three active changes after they are hatched. In their first or larva stage they are of a long cylindrical form, with six thick legs, and without any appearance of wings, which makes them so similar to the apterous or wingless species, forming the last division

of this family, that it is difficult, and in some cases almost impossible, to decide whether they are larvæ or perfect insects. But some idea may be formed of the wingless species when they have arrived at their perfect stage, by the hard appearance of their surface. The second stage, or pupa, is similar to the first state; but now they obtain rudimental wings, closely applied to the base of the abdomen, which easily distinguish them from the former state. In their third or last state they become perfect insects, when their wings expand to their full extent, and their legs lengthening also become much more slender in form. It is in this state that the stemmata or eyeclets appear on the fore part of the head of some species.

The habits and instincts of this strange and highly interesting family are as yet very little known. It has been recorded by a previous author, that they live on vegetable food, and that the females deposit their eggs in the earth. But Allan Cunningham, Esq., the botanist, has kindly informed me, that the reason why they are so rarely met with, is owing to their solitary and sedate habits, they being always found single, or rarely two in company, crawling slowly up the underwood and shrubs, &c., on which they seem to pass their existence in the hot summer months, feeding on the young glutinous or gummy trees, and that they disappear perhaps for two or three years together.

Linnæus placed the Spectres with the Mantæ, in which he was followed by Gmelin; but Stoll, when delineating the species which were in the Dutch collections, proposed to subdivide them into a separate genus, under the denomination of *Phasma*, which word Fabricius and Lichtenstein also use; while the latter has divided them into two grand divisions; viz. those which are wingless, and those with wings in their perfect state. He has also subdivided them into several minor divisions. Lately, M. Serville has published a new arrangement for the insects of this family; but he seems to have been unacquainted with those of Australia. He appears to divide the winged species into two divisions; viz. those with distinct stemmata or eyeclets, and those with indistinct.

But on examining the Australian species, I find that some of them, which must be placed with the Indian species that occupy his genus *Cyphocrana*, characterized as having "indistinct," have in fact distinct stemmata or eyelets in front of their heads: and as several species in this work differ very much in form from those of the other parts of the globe, I have therefore proposed to the scientific entomologist several subgeneric divisions, noticed in the "Species Synopsis."

One of the most striking geographical divisions of these insects is, that most of the winged Australian species possess two abdominal appendages or leaflets at the tip of the abdomen, which vary in length and form; the females of some of the Indian species has three broad short ones, while in the males, as in those of America, these organs are entirely wanting. The males of most of the species of this family, taken generally, are also armed at the tip of the abdomen with a pair of forceps of various length and strength; even the males of some apterous or wingless species possess this last-mentioned appendage, but in a less degree.

Before entering on the descriptions of the species, it will be right to state that the colours of these insects are very difficult to describe properly from preserved specimens; for those which are of a fine green colour when living, are liable to change to a brownish yellow, and if placed in spirit of wine, to dark brown. It has been recorded that when the pin is pierced through the thorax of some species of this family, they emit a yellow liquid, which if it touches any part of the insect's body will turn it yellow.

PLATE I.

Anchirole spinicollis, Gray ♂

We will commence with the First Plate, which contains two figures of the Slender Spectres. The first is named the *Spined-necked Slender Spectre*, or *Ctenomorpha spinicollis*, Sp. 12. The tegmina are of a violet-brown, with a short longitudinal white line at the tip; the basal half of the wings is yellowish white, with the apical half dusky; the costal area is dark yellowish brown, with the base yellow; the antennæ are pale brown; the head is blackish with three distinct stemmata placed triangularly in front; the mesothorax* is scattered with sharp tubercles, and is yellowish brown; the abdomen is rather darker, with the tip rather black; the legs are rather short, dentated, especially the thighs.

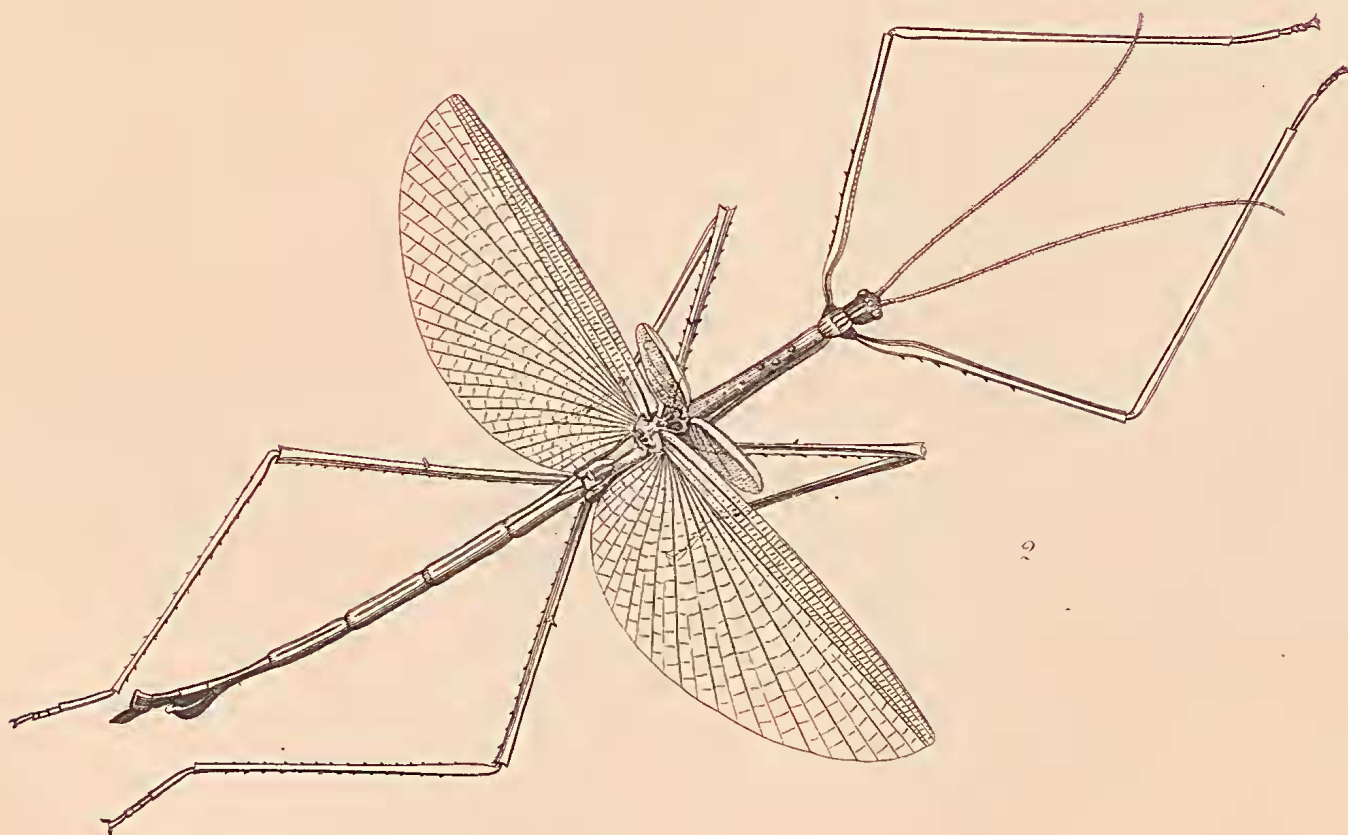
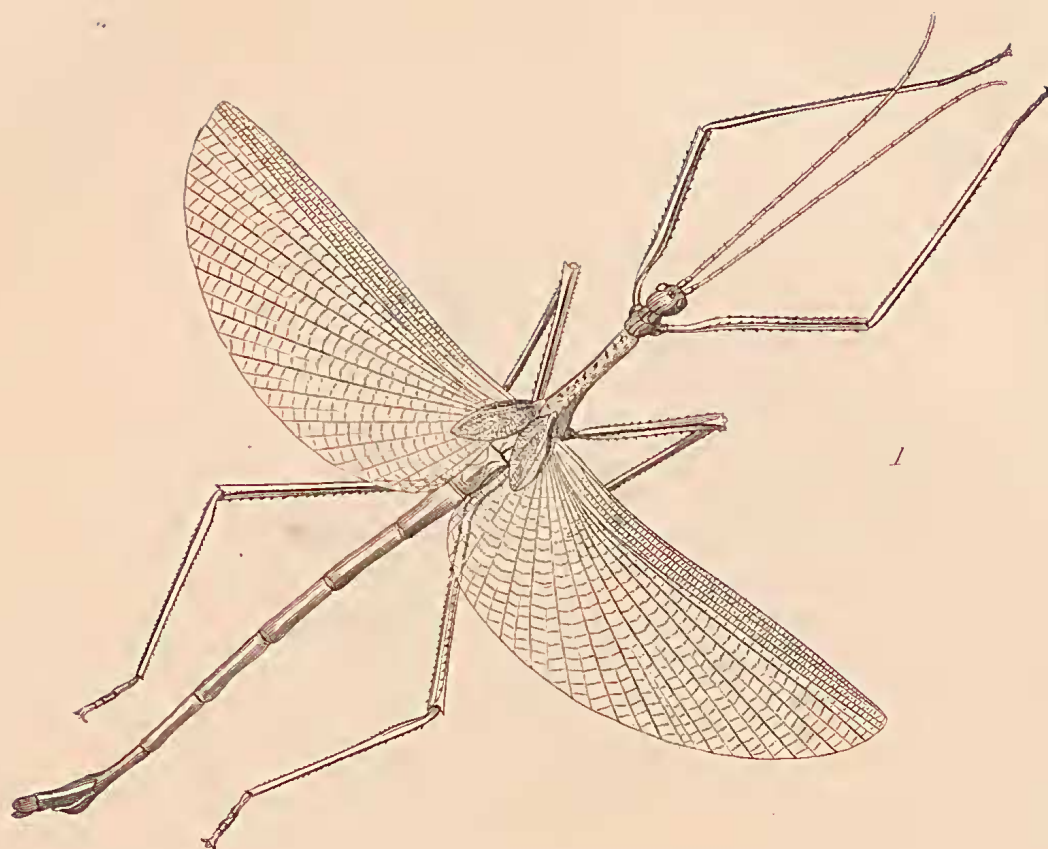
The specimen was brought from Melville Island, and is now deposited in the Rev. F. T. Hope's collection.

Ctenomorpha marginipennis, Gray ♂

The second figure represents the *Margined-winged Slender Spectre*, or *Ctenomorpha marginipennis*, Sp. 11, the body of which is of a blackish olivaceous; the mesothorax has a few scattered black rings, but that of the female is covered with sharp tubercles; the legs of this species are much longer than those of the last, and of a blackish olivaceous, with the four anterior thighs dentated, while the posterior legs are dentated throughout; the tegmina are yellowish green, with a broad white anterior margin; the wings are of a brownish colour; the costal area yellowish green, with the basal half of the anterior margin white; the antennæ pale brown; the abdomen is dark olivaceous, with two very small leaflets at the tip.

The British Museum contains specimens of this species, which were brought by Mr. Hunter, (the surgeon who accompanied Captain King's voyages,) probably from the north-west coast; and the Rev. F. T. Hope is also in possession of this insect.

* The thorax or trunk of insects is divided into three distinct segments. The first is termed the prothorax, or fore segment of the trunk; the second mesothorax, or middle segment of the trunk; the third metathorax, or hind segment of the trunk: to each of these a separate pair of legs is affixed.



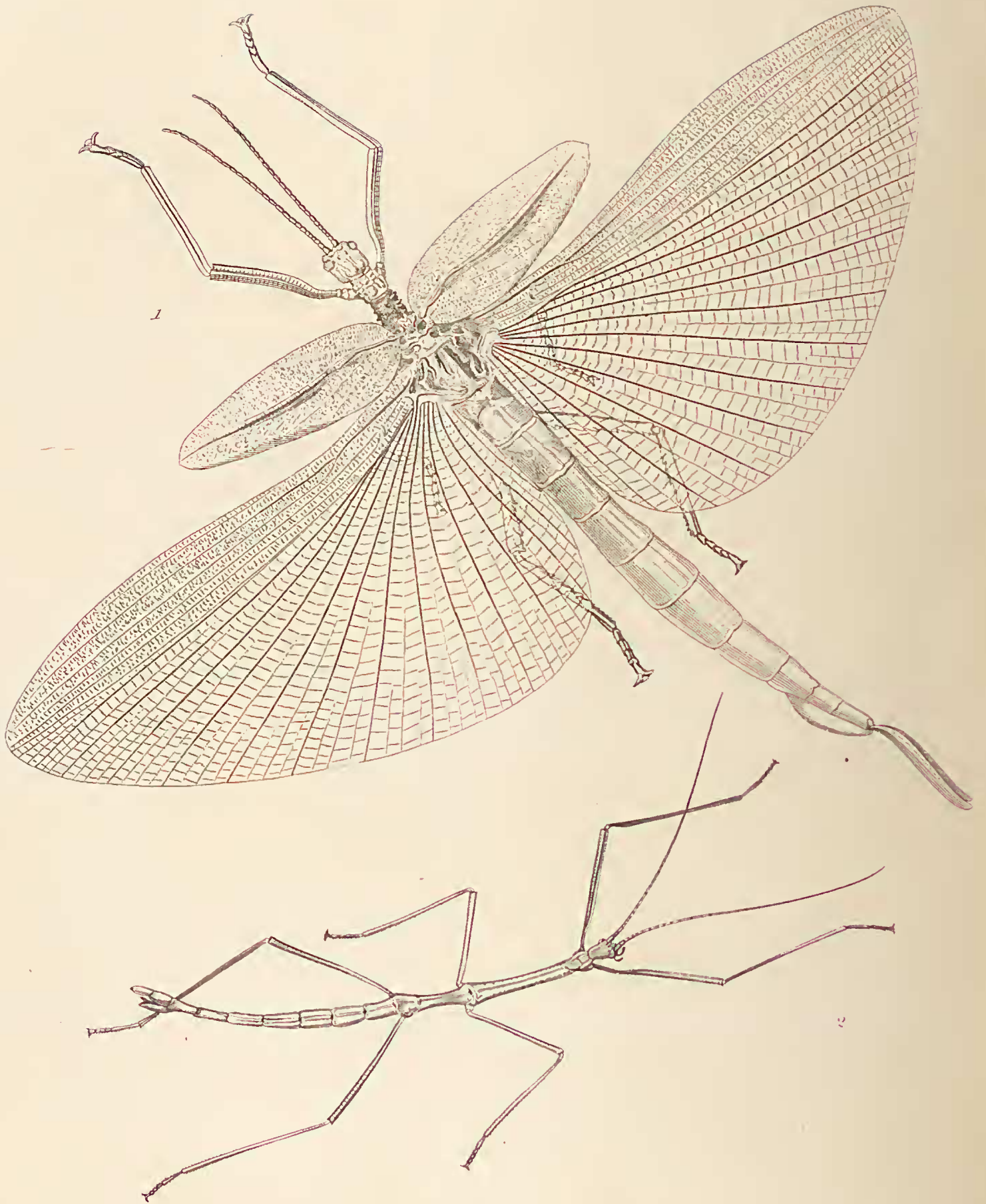


PLATE II.

The first figure of this Plate is termed the *Pink-winged Spectre*, or *Podacanthus Typhon*, Sp. 4, and is one of the showiest species, owing to its size, and the fine pink colour which tinges the hyaline wings; the costal area is of a pale green, with the base pink; the tegmina are of a pale green, very much ridged in the centre, and darker in colour than the other parts; the legs are reddish pink, rather short; the anterior have elevated lines, while the four posterior ones are spined beneath; the mesothorax is very short, narrow before, and covered with numerous tubercles; the body long, yellowish at the base and pink at the tip, but the hypopygium or last ventral segment is green, with two leaflets at the tip, which are pinkish green; the head with three distinct stemmata.

Podacanthus
typhon, Gray ♀

The figure is taken from a specimen in the collection of J. G. Children, Esq.; it is that of a female, brought to this country by A. Cunningham, Esq., who states that they are found on the brushes on the shores of Port Jackson, "north shore," in the month of December. The British Museum however possesses two specimens, which Mr. Hunter deposited there; one of them is that of a male, and differs from the other sex in having a pair of forceps fixed at the tip of the abdomen; the leaflets also differ from those of the female in being broader at the tip than the base, while those of the female are of an equal width throughout.

The second figure is the *Long-horned dirty Walking-stick*, or *Bacteria cœnosa*, Sp. 13; it is that of a wingless species, and belongs to the last division; its colour is yellowish brown, with the tip of the abdomen green; the hypopygium is yellow; the legs are of moderate length, but rather darker in colour than the body, and hairy; the antennæ are very long and setaceous.

B. griseus
cœnosa, Gray ♀

The Rev. F. T. Hope possesses the specimen from which the figure was taken, but it is uncertain from what part it was brought.

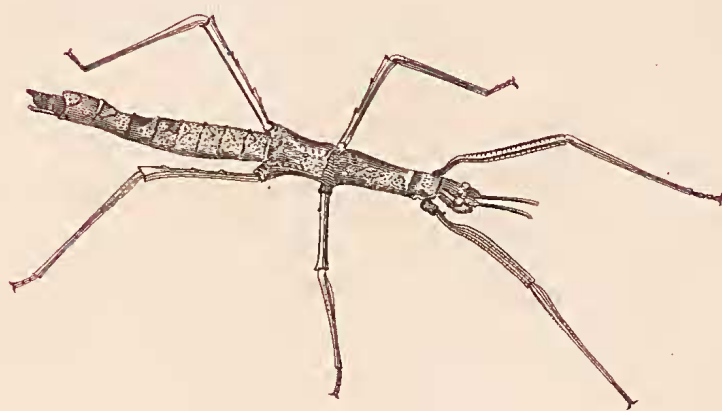
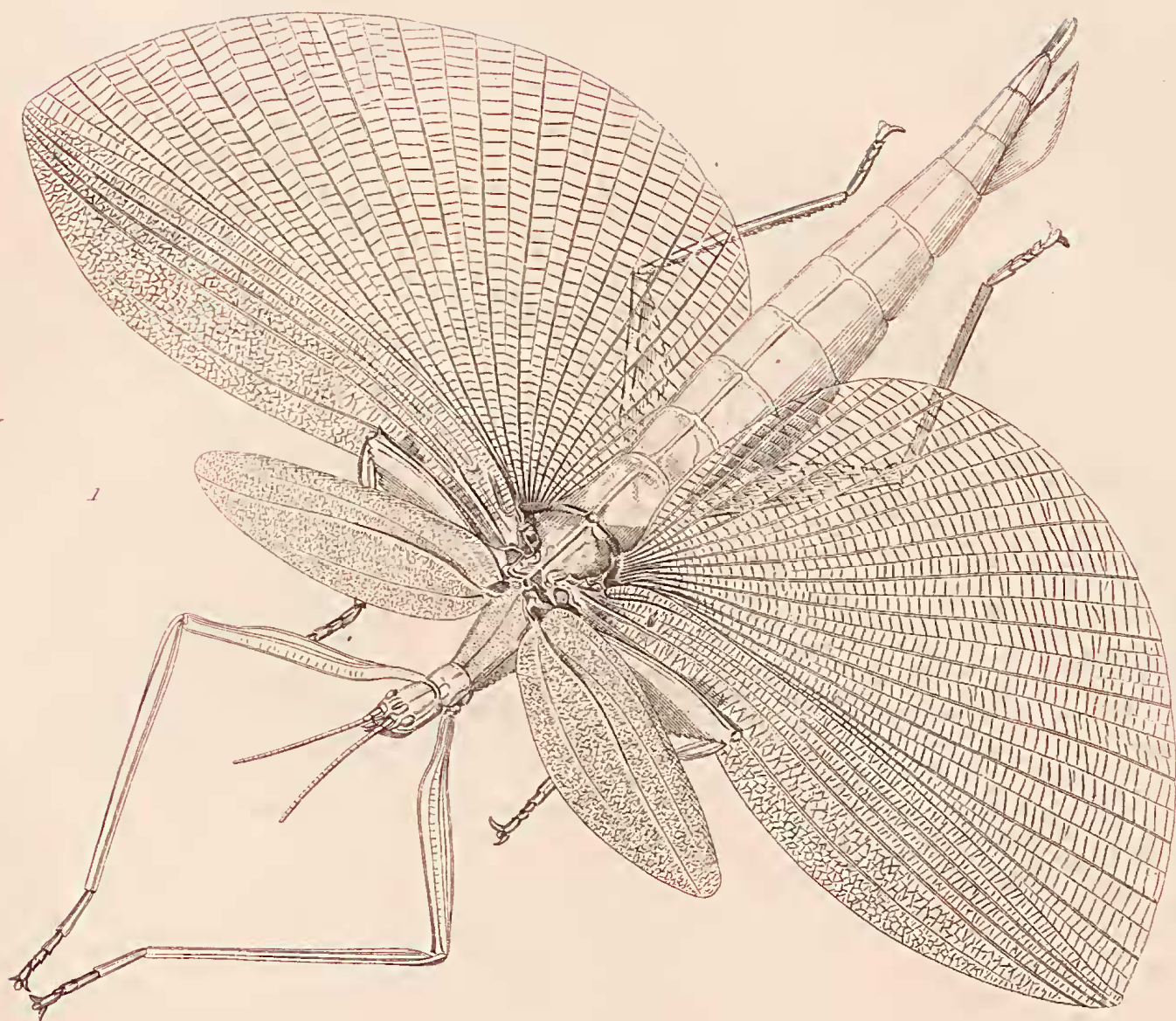
PLATE III.

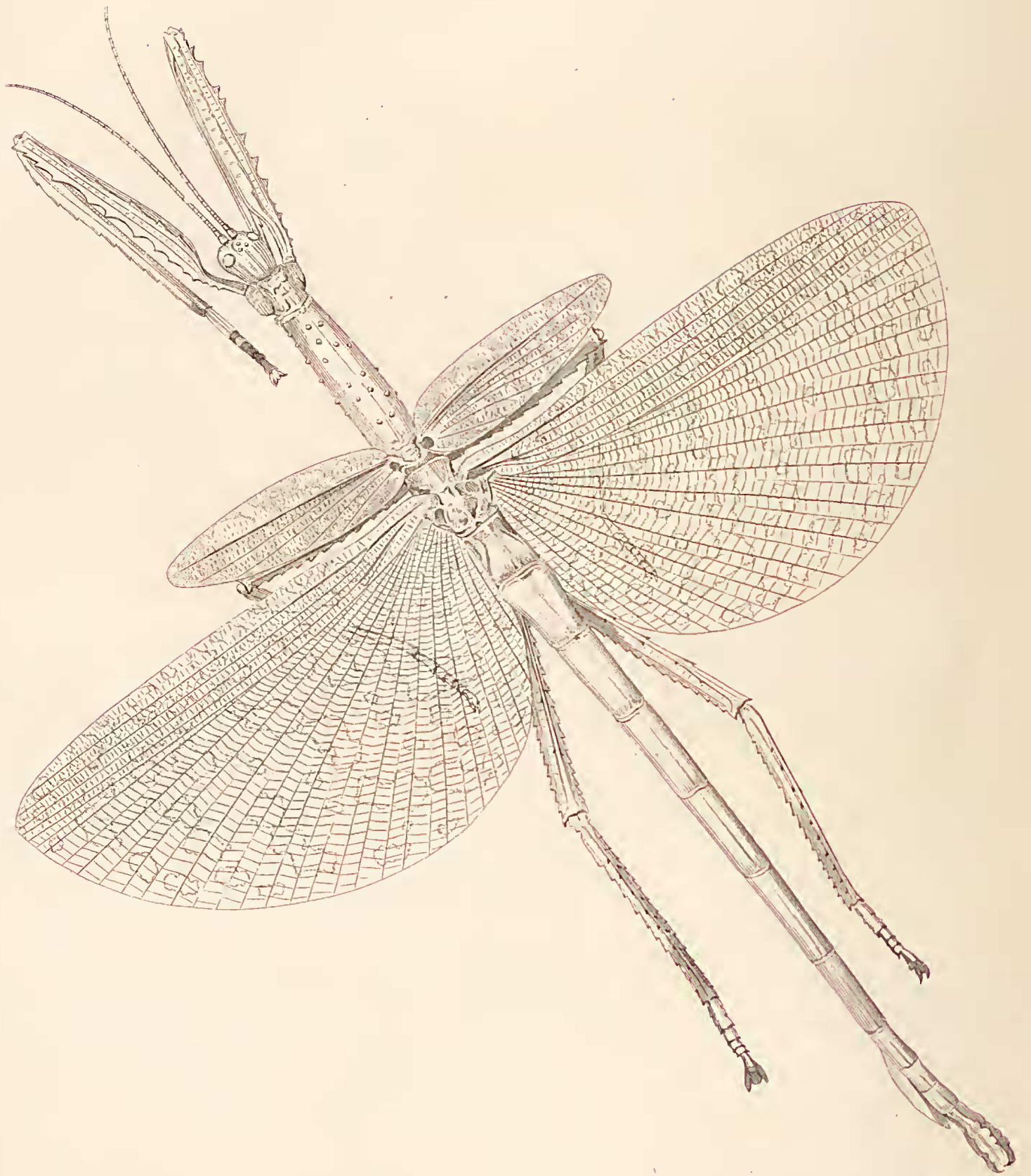
The form of the *Yellow-winged Spectre*, or *Trigonoderus Childrenii*, Sp. 3, differs much from the *Pink-winged* species in regard to its legs, for they are rather longer; the four posterior ones have their thighs dilated outwardly and serrated, but all are of a glaucous colour; the mesothorax is somewhat triangular in form, and keeled down the centre, with the sides sloping, and the outer margins serrated; the wings hyaline, tinged with yellow; the costal area is much broader near the centre than at the tip, and is of a dark green, with the part near the base yellow, while the base itself is violet; the tegmina are of a dark green, ridged in the centre; the abdomen is yellow, with the margin on the sides, the hypopygium or last ventral segment, and the leaflets dark green; the latter are very short.

This figure was taken from a specimen in the collection of J. G. Children, Esq., which was brought home by Mr. Cunningham, who informs me that they are found in the same place as the *Pink-winged* species (Pl. II. fig. 1.). The British Museum also contains two specimens of this fine insect.

The second insect represented in the Plate is the *Short-horned dirty Walking-stick*, or *Bacillus squalidus*, Sp. 16, and differs very much in form from the others in this work; the colour is of a dark sepia brown, with some white, and has much the appearance of being scaly; the thorax and abdomen are keeled down their centre. The latter is short with the base depressed, while the tip is compressed; the legs are rather short, with elevated lines: but the four posterior thighs have three teeth, placed at equal distances on the upper sides.

This curious insect is in the possession of the Rev. F. T. Hope.





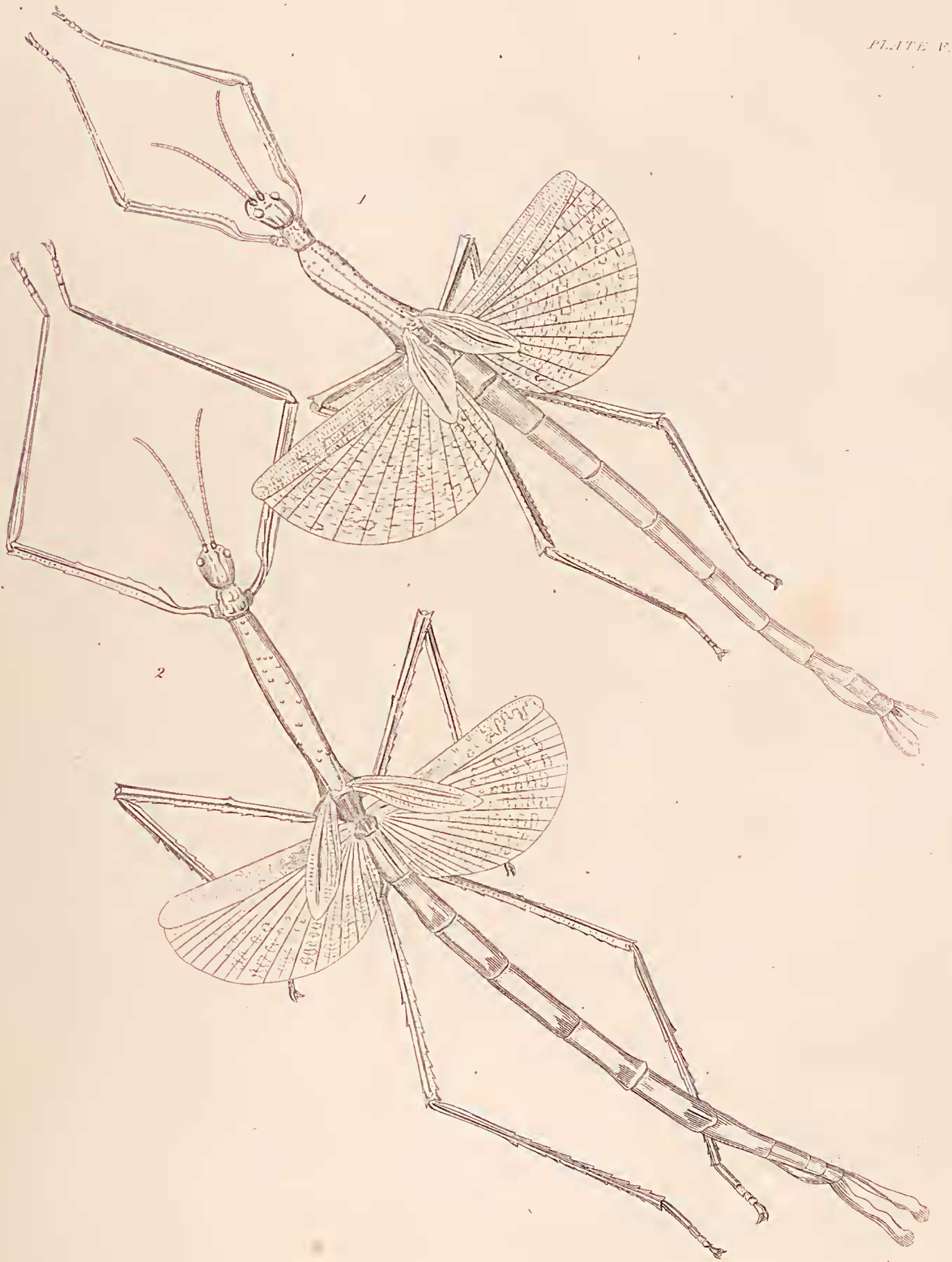


PLATE IV.

The magnitude of the *Titan tailed Spectre*, or *Diura Titan*, Sp. 5, is greater than that of any of its congeners; and the Rev. W. Kirby, in his valuable "Introduction to Entomology," has noted it as the largest of all the Orthopterous insects which are at present known. (The figure in the Plate represents it two inches short of its natural size.) The general colour of the wings is blackish brown, but irregularly spotted and banded with white; the costal area is of a greenish black irregularly spotted with testaceous, and has the base red. The tegmina are similar to the last in colour and markings, but with a white spot near the centre of each; the head and prothorax are of a greyish colour; the former has three distinct stemmata in front; the mesothorax is reddish, but with scattered sharp tubercles; the abdomen is orange, with the tip and leaflets of a gray colour,—the latter rather short in proportion to those which some species possess, and are quite differently formed from the others, being trigonal and dentated; the legs are also short and very much dentated, but the fore ones are trilatral.

Acrophylla
titan, MacL.

The pupa has the body similar in colour to the older stage, but it has the appearance of being spotted; the rudimental wings are decidedly spotted with white.

This splendid species, Mr. Cunningham informs me, is found on shrubs in the scrubby parts of the Colony, in the month of December; it is very solitary in its habits, and is locally termed "Walking Straw, or Animated Stick."

PLATE V.

Diura
spinicollis, Gray ♀

The first is the *Japetus tailed Spectre*, or *Diura Japetus*, Sp. 7, which has the prothorax as well as the mesothorax covered with small tubercles, the former is yellowish brown, while the latter is light green; the wings are very small in proportion to the length of the body, and are black with white irregular spots; the costal area has the anterior half green, with the inner margin reddish pink marked with black spots; the tegmina are light green, as is also the abdomen,—the latter having two leaflets, which are very short and broad; the legs are very short and of a greenish yellow, very much dentated; the head has three distinct stemmata in front.

This species was brought from Melville Island, and is in the possession of the Rev. F. T. Hope.

Chromola
marginifrons, Gray ♀

The second species is the *Chronus tailed Spectre*, *Diura Chronus*, Sp. 6. The wings of this insect are small and black, more or less obscurely spotted with white; the costal area is green, irregularly marked with black, but with the base of a lighter colour, and the black markings more distinct; the head, prothorax and legs are light pinkish brown, the latter very much dentated; the mesothorax, tegmina, abdomen and leaflets, are blackish green; the former has small black tubercles; the abdomen is spotted with black at the tip of each segment, which is also somewhat dilated, while the leaflets are rather long and dentated.

The pupa is similar to the older stage; but the rudimental wings have the appearance of being spotted with white.

This insect is often found in collections, and I believe is confined to Van Diemen's Land.

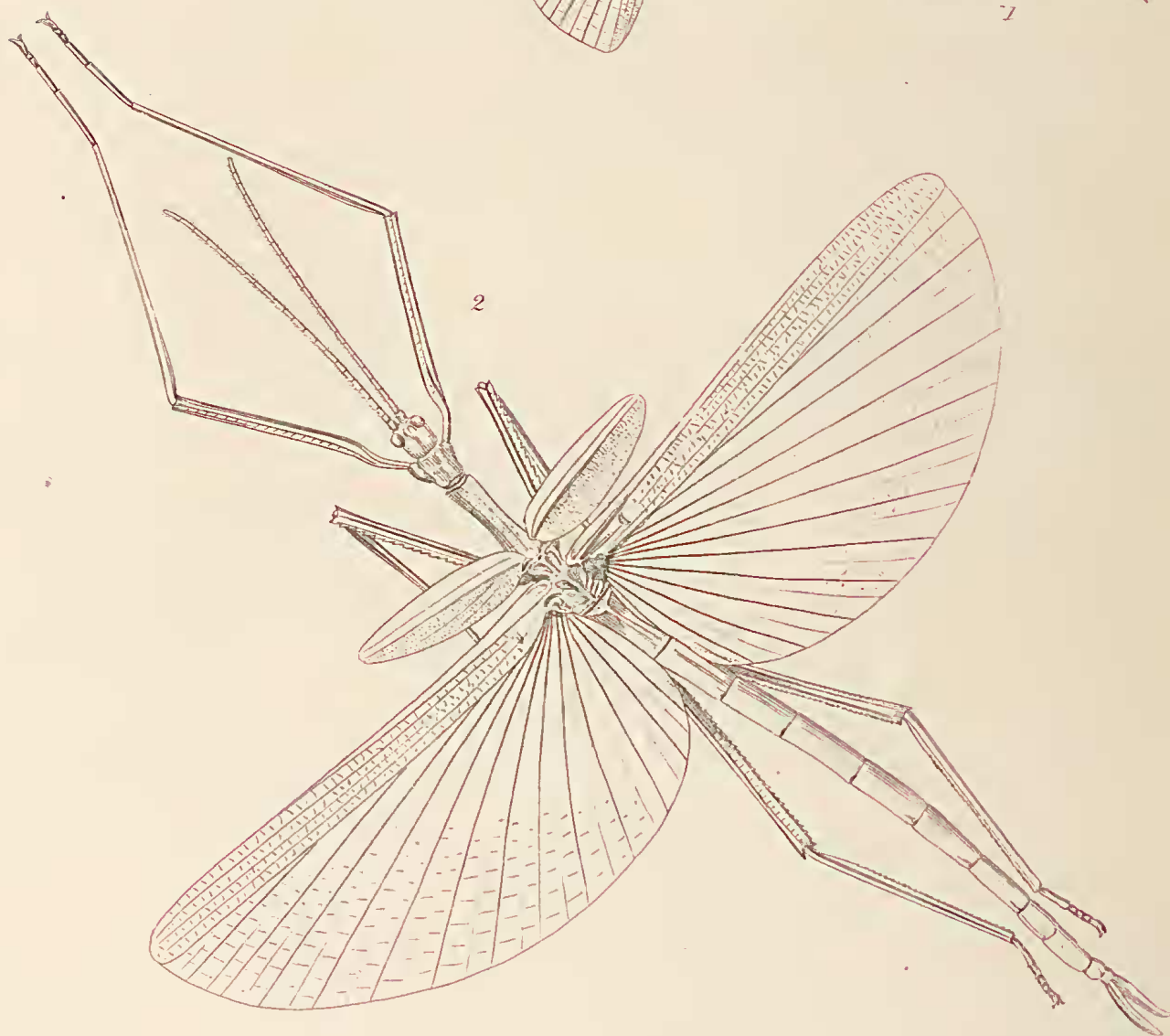
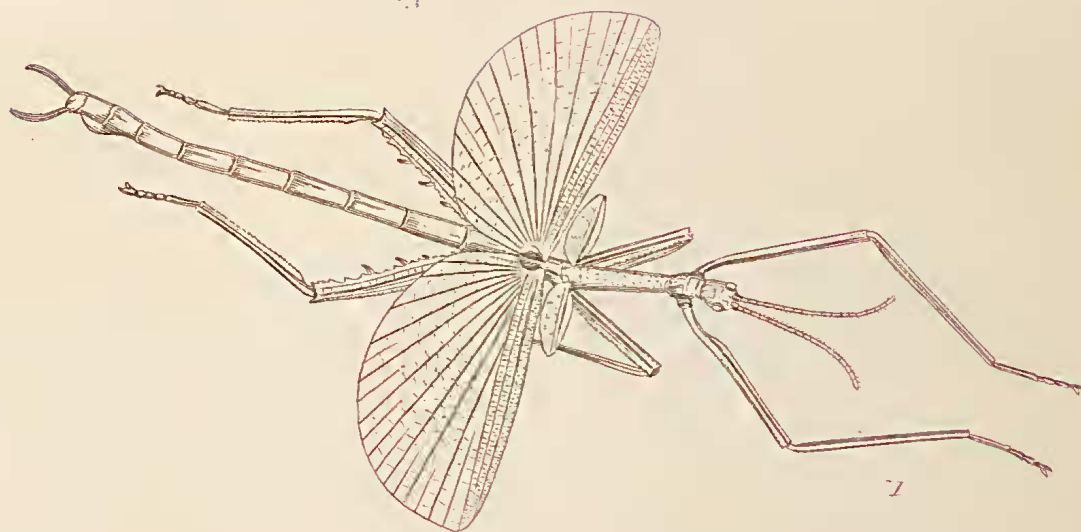


PLATE VI.

The splendid colour of the wings of this species distinguishes it from the other species; it is named *Violet-winged tailed Spectre*, or *Diura violaseens*, Sp. 9. The costal area is yellowish green tinged with brown; the anterior margin bright yellow, with the outer ridge white; the tegmina are similar to the latter in colour and markings: but the most remarkable character which this insect possesses, is the immense strength and thickness of the hind thighs, though of a moderate length in comparison with the size of the insect; they are also armed with three strong, long, black spines, situated beneath, the one near the base is smaller than the other two; they are also strongly dentated, with elevated longitudinal lines on the upper surface, and are of a reddish yellow; the head is small without any stemmata; the mesothorax is rather long, narrow, but wider at the base, and is brownish yellow, covered with minute tubercles; the abdomen is reddish violet, with the tip green, but the leaflets are reddish violet; the four fore-legs are green, with the thighs of the intermediate pair dentated.

Di. gymmura
violaseens, Leach 81

The figure is taken from a specimen in the collection of the British Museum, and I believe was brought by Mr. Hunter; it had been previously described by Dr. Leach in his "Zoological Miscellany."

The second figure is the *Typhæus tailed Spectre*, or *Diura Typhæus*, Sp. 8; the tegmina of which are brownish green, with a red longitudinal line down the centre, their fore-half white, with the outer ridge pale blue; the wings are yellow, with their summit dusky; the costal area brownish green tinged with red; the fore-margin and near the base white, with the outer ridge pale blue, but the base is purplish; the head, prothorax, mesothorax and the legs, are red; the mesothorax is covered with minute tubercles; the four hind legs are strongly dentated; the abdomen is yellowish green tinged with red; the leaflets rather short, and red.

Tropidoderus
childreni, Gray 3

The British Museum contains the fine specimen from which the drawing was taken.

PLATE VII.

The first figure belongs to the last division, and is called the *Slender long-horned Walking-stick*, or *Baeteria fragilis*; Sp. 14. Its general colour is blackish green, with a white line on each side of the head; legs and antennæ rather long and slender.

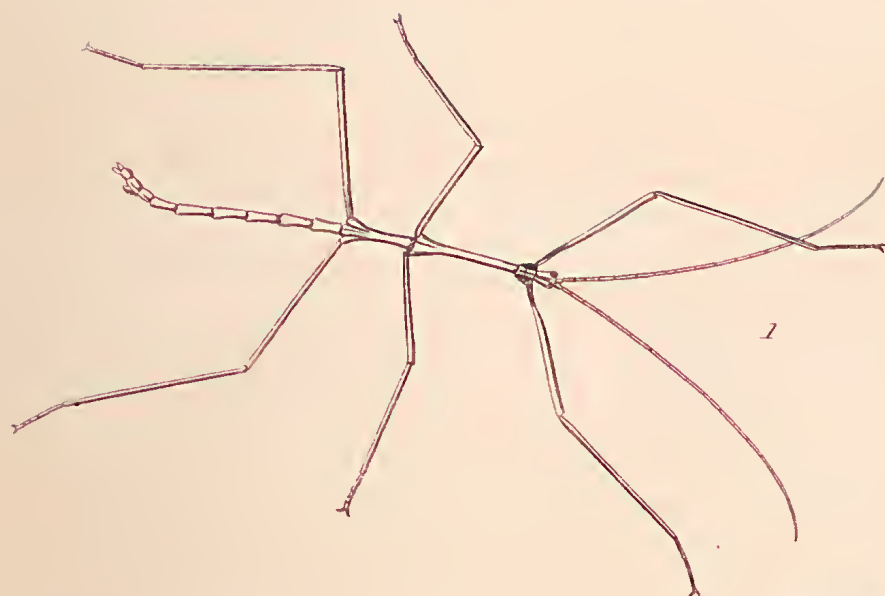
In the Rev. F. T. Hope's collection, who is uncertain from what part of Australia.

The second figure is remarkable for the peculiar form of the wings, and is called the *Rose-winged tailed Spectre*, or *Diura roseipennis*, Sp. 10. The wings are very small, with the costal area projecting slightly beyond, and pointed, and are of a pale pink; while the costal area is green, with a yellow base; the tegmina, body and the legs, are rich verditer green; the abdomen has the appearance of three narrow longitudinal yellow lines, one placed in the centre, with one on each side; the mesothorax is of moderate length, very narrow, gradually wider posteriorly, but keeled down the middle, with the sides sloping and margined, also covered with minute tubercles; the antennæ are extremely short and thick; the legs moderate and simple.

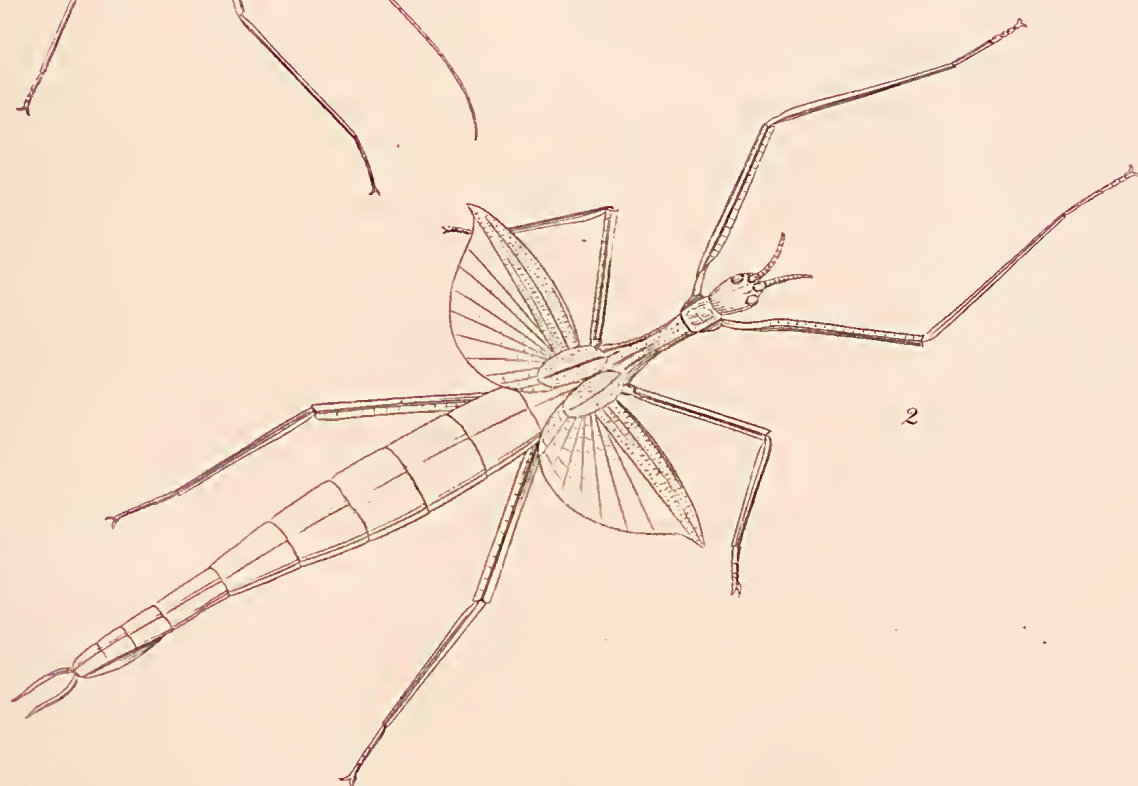
The specimen is in the British Museum, and I believe was brought by Mr. Hunter, probably from the north-west coast.

The third is the *Brown short-horned Walking-stick*, or *Bacillus brunneus*, Sp. 15, which is also a wingless species, in general yellowish brown, rather lighter on the mesothorax, but the metathorax is tinged with red; the legs are rather short, and very much dentated beneath the thighs.

This insect was sent from the Swan River Colony by Alexander Collie, Esq., to Mr. Children, in whose possession it now remains.



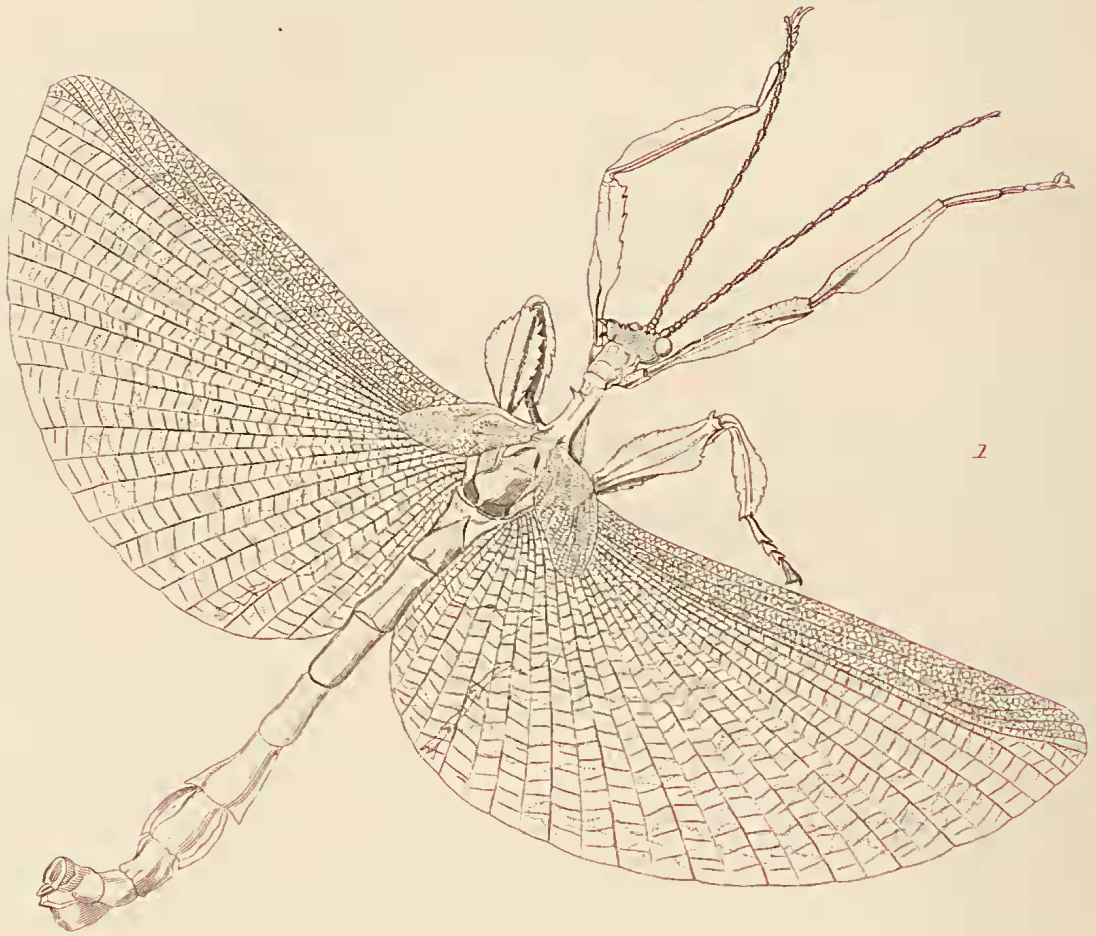
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2



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1



2

PLATE VIII.

The formation of the head and abdomen of the species on this Plate is quite distinct from that of any of the species previously noticed; the former is pyramideal, ending with two strong spines, having also smaller ones on the sides; the latter has the fifth, sixth, and seventh joints dilated, more especially the middle one. The first is *Hope's dilated-bodied Spectre*, or *Extatosoma Hopii*, Sp. 1, the wings of which are of a blackish colour, with interrupted spotted whitish bands, while the costal area is green with transverse undulated blackish bands; the tegmina are also green, and very much ridged; the mesothorax short, narrow, but widening behind, with two spines situated before; the abdomen is narrow, of a brownish green, with the tip turned up; the legs are very much dilated throughout, green with blackish transverse narrow bands; the fore thighs are trigonal.

Extatosoma
tiaratum, Gray ♂

The second is the *MacLeay's dilated-bodied Spectre*, or *Extatosoma tiaratum*, Sp. 2. Its general colour is brownish green, but it is much thicker in proportion than the last; the abdomen has rows of laminæ on the upper surface, which are dentated and of a dark brownish black. It is also armed at the tip with a strong, sharp, curved, black claw; the prothorax as well as mesothorax are spined, the latter, which is somewhat triangular, only on the fore part; the tegmina and wings are rudimental; the legs are very much dilated, the thigh and shank trigonal, but the margins of the dilatation dentated; the first joint of the fore feet is dilated, and erect.

♀

Whether this insect be the pupa of another species, or the female of the preceding one, is matter of great doubt; but it will be seen that I have considered it as the former.

These curious insects are exceedingly rare, and are in the collection of the Rev. F. T. Hope. The latter species was first described by W. S. MacLeay, Esq., in Captain King's Voyages, and Mr. Cunningham has kindly informed me, that "they are found on the sapling gum-trees in the neighbourhood of Paramatta."

SPECIERUM SYNOPSIS.

ORTHOPTERA.

CURSORIA, *Latr.*

Phasmidæ, Kirby. }
Phasma, *Auct.* }

A. Tegmina alæque in utroque sexu.

a. Mesothorax brevis. Antennæ mediocres, fæminæ breviores.

* Pedes dilatati.

α. Abdominis articuli 5. 6. 7. dilatati. . . . EXTATOSOMA.

1. P. E. *Hopei*. Pl. VIII. fig. 1.

Viride; mesothorace anticè angustato, spinis duabus; tegminibus brevibus, sub-ovalibus, viridibus; areâ costali viridi, undato-fasciatâ; alis hyalinis, nigrescentibus, fasciis interruptis subalbidis; pedibus viridibus, nigro-fasciatis; tarsorum anticorum articulo primo elongato, vix dilatato.

2. P. E. *tiaratum*. Pl. VIII. fig. 2.

Viride; prothorace spinoso; mesothorace anticè angustato, subdepresso, spinis duabus, posticè dilatato, subtùs plano; metathorace subtùs plano, marginibus lateralibus denticulatis; tegminibus viridibus, subovatis, minutis; alarum rudimentis brevioribus; abdominis segmentis suprâ laminis binis dentatis in medio armatis, marginibus lateralibus denticulatis; tarsorum anticorum articulo primo dilatato, erecto.

Phasma tiaratum, *MacL.* King's Voyage. ii. 455. tab. B. fig. 3. & 4.

** Femora quatuor posteriora tantum dilatata.

α . Mesothorax triangularis ; alæ magnæ. . . . TRIGONODERUS.

3. P. T. *Childreni*. Pl. III. fig. 1.

Capite prothoraceque albidis ; mesothorace scabro, subflavo ; tegminibus viridibus ; alis hyalinis albis ; nervis flavescentibus ; areâ costali viridi, juxta basin flavâ, basi violascenti ; abdomine sulphureo, marginibus lateralibus hypopygioque viridibus ; foliolis duobus brevibus ; pedibus glaucis.

*** Pedes spinosi, nec dilatati.

α . Mesothorax spinosus, angustatus ; alæ magnæ. . . . PODACANTHUS.

4. P. P. *Typhon*. Pl. II. fig. 1.

Flavum ; tegminibus viridibus, subtus basi roseis ; alis hyalinis, albis ; nervis roseis ; areâ costali viridi, basi et subtus roseâ ; abdomine flavo ; foliolis duobus longis ; pedibus rubro-albidis.

b. Mesothorax longus. Antennæ in utroque sexu æquales.

α . Corpus longum, cylindricum, abdominis foliola duo elongata. . . . DIURA.

5. P. D. *Titan*. Pl. IV.

Subcinereo-fuscum ; mesothorace scabro ; tegminibus nigro-viridibus, testaceo-maculatis, maculâ in marginis antici medio magnâ albâ ; alis nigro-fuscis, albo-maculatis ; areâ costali ad basin rubrâ nigro-maculatâ, ad apicem nigro-viridi testaceo-maculatâ ; pedibus albo-cinereis, femoribus anticis trigonis angulo inferiori dentibus magnis, rufis, postico minoribus et superiori nullis ; abdominis foliolis duobus brevibus, trigonis, dentatis.

Pasma Titan, MacL. King's Voyage. ii. 454.

6. P. D. *Chronus*. Pl. V. fig. 2.

Subnigro-viride ; maris mesothorace scaberrimo, fœminæ scabro ; tegminibus angustatis, brunneo-viridibus ; nervis flavescentibus ; alis nigris, obscure albo-maculatis ; areâ costali brunneo-viridi, basi nervisque flavescentibus, lineis irregularibus nigris ; abdominis foliolis duobus longis ; pedibus mediocribus, posticè dentatis.

7. P. D. *Japetus*. Pl. V. fig. 1.

Flavo-viride ; prothorace mesothoraceque scaberrimis ; tegminibus mediocribus ;

alis nigris albo-maculatis ; areâ costali viridi ; abdominis foliolis duobus brevibus ; pedibus mediocribus, dentatis.

8. *P. D. Typhæus*. Pl. VI. fig. 2.

Brunneum ; mesothorace vix scabro ; tegminibus posticè olivaceis, disco antice albo, extrorsum viridi-marginato, introrsum rufo-marginato ; alis hyalinis, albidis, nervis brunneis, basi violascentibus ; areâ costali olivaceâ, margine anteriori juxta basin albo, hac internè rufo-marginatâ ; abdomine longo, cylindrico ; foliolis duobus brevibus ; pedibus anticis longioribus, quatuor posticis mediocribus dentatis.

9. *P. D. violascens*. Pl. VI. fig. 1.

Flavo-viride ; mesothorace cylindrico, vix scabro ; tegminibus flavo-viridibus, margine anteriori albis ; alis violascentibus ; areâ costali flavo-viridi, albo-marginatâ ; abdomine basi rufo-violascenti, apice flavo-viridi ; foliolis duobus filiformibus ; pedibus anticis longioribus, intermediis brevibus, femoribus dentatis ; posticis longis, femoribus crassis, angulatis, dentatis, lineis elevatis striatis.

Phasma violascens. *Leach*, Zool. Misc. 1. pl. 9.

10. *P. D. roseipenne*. Pl. VII. fig. 1.

Viride ; mesothorace scabro, anticè angustato in medio carinato, lineis flavis tribus ; tegminibus viridibus ; alis minoribus roseis ; areâ costali viridi basi flavâ ; abdomine longo, crasso, viridi, lineis longitudinalibus tribus subflavis ; foliolis duobus filiformibus ; pedibus mediocribus dentatis ; antennis brevioribus.

β. Corpus gracile, abdominis foliola duo minima. . . . CTENOMORPHA.

11. *P. C. marginipenne*. Pl. I. fig. 2.

Olivaceum ; maris mesothorace annulis parvis nigris, fœminæ scabro ; tegminibus brunneis, margine exteriori albis ; alis subhyalinis, albo-brunneis : areâ costali brunneâ juxta basin albo-marginatâ ; pedibus spinosis.

12. *P. C. spinicolle*. Pl. I. fig. 1.

Brunneum ; mesothorace scaberrimo ; tegminibus brunneis, juxta apicem albo-marginatis ; alis hyalinis basi flavo-albidis, margine exteriori nigrescentibus ; areâ costali brunneâ, basi subhyalinâ, flavo-albidâ, apice nigrescenti ; pedibus brevibus, dentatis.

B. Tegmina alæque in utroque sexu nullæ.

a. Antennæ longæ, setacææ. . . . BACTERIA, *Latr.*

13. P. B. *cænosum*, Hope MSS. Pl. II. fig. 2.

Filiforme, flavo-brunneum ; abdominis apice viridi, hypopygio flavo ; pedibus longis, hirsutis.

14. P. B. *fragile*, Hope MSS. Pl. VII. fig. 1.

Filiforme, nigro-viride ; capite fasciis duabus albis.

b. Antennæ breves. . . . BACILLUS, *Latr.*

15. P. B. *brunneum*. Pl. VII. fig. 3.

Filiforme, flavo-brunneum ; thorace tuberculis parvis, albis ; pedibus brevibus, femoribus internè dentatis.

16. P. B. *squalidum*, Hope MSS. Pl. III. fig. 2.

Subcylindricum, rugosum, brunneo-nigrum, albo mixtum ; capite bicorni ; mesothorace abdomineque ad apicem in medio carinatis, hoc basi subdepresso et apice compresso ; pedibus mediocribus, posticis quatuor externè subdentatis.

Die 8^o Julii, 1833.